Amendment to the Drawings:

Figures 1-9 stand rejected under 37 CFR § 1.121(d) because some of the notations are unclear to read. Accordingly, Applicants submit herewith as annexed to the present response Replacement Drawing sheets showing amended figures which include the desired changes, without markings in compliance with 37 CFR § 1.121(d). No new matter is added and no new issues are raised by the amendment to the drawings to comply with 37 CFR § 1.121(d).

REMARKS

Now in the application are claims 1-36, of which 1, 14, 21, 25, 29, and 33-36 are independent. The following comments address all stated grounds of rejection, and place the presently pending claims, as identified above, in condition for allowance.

CLAIMS REJECTIONS UNDER 35 U.S.C. § 102

Claims 1-26 and 28-36 stand rejected under 35 U.S.C. § 102. For clarity in the discussion below each respective related claim set is discussed separately.

I. Rejection of Claim 1-13 under 35 U.S.C. § 102 (b):

Claims 1-13 stand rejected under 35 U.S.C. § 102(b) as being anticipated by the publication entitled "Multi-Signal Flow Graphs: A Novel Approach for System Testability Analysis and Fault Diagnosis" by Deb *et al.* (hereinafter "Deb"). Applicants respectfully traverse this rejection and contend that Deb does not anticipate any of these claims.

Claims 2-13 depend, directly or indirectly, upon independent claim 1, and therefore incorporate the patentable features of claim 1.

Claim 1 is directed toward a modeling process. The modeling process provides a plurality of blocks with each of the blocks representing functional entities. The modeling process generates a plurality of output signal values from the plurality of blocks and groups the plurality of output signals as an ordered set in a multiplexer as a first composite signal. In turn, the modeling process outputs the first composite signal. A composite signal represents an ordered set of signals that are bundled together to form a single entity. The composite signal is a general facility for grouping and splitting a set of heterogeneous or homogeneous signals without loss of information.

Deb does not anticipate the steps of claim 1. Deb discloses the use of multi-signal directed graphs to isolate faults in a hierarchical system. Deb further teaches a three-step approach for multi-signal modeling that includes a first step of entering the structural model, a second step of adding signals to the modules and test points, and a third step of updating the models for special situations. *See*, page 5 § 2.4 of Deb. Deb discloses the signals added in the second step are identifiable from a functional specification or from independent variables in the transfer function. For example, Deb states the signal specification of a power amplifier will include output distortion, harmonic distortion, and power output. That is, in accordance with the disclosure of Deb any unique attribute will have an associated signal. Hence, in a bus with multiple independently addressable devices attached to it, the address of each device will serve as a signal.

As a further example, Deb discloses a multi-signal dependency model of a cassette player system. *See,* Figure 4 of Deb. The model of the cassette player includes a power supply, tape head, pre-amplifier, power amplifier, and a three-way speaker system. Construction of the model is based on the assumption that no internal test points are available in the cassette player and hence performance can only be monitored at the output (i.e., by listening to sound from the three-way speaker and by observing the power indicator). The model includes a signal S1 corresponding to treble, a signal S2 corresponding to bass, a signal S3 corresponding to mid-range, a signal S4 corresponding to SNR, and a signal S5 corresponding to harmonic distortion. The model further illustrates the output of the tweeter is used to monitor the signal S1 (i.e., treble) and the signal S4 (i.e., SNR). The signals of Deb are not grouped. On the contrary, they are monitored separately by separate devices. For example, the output of the midrange speaker is used to monitor signal S3 (i.e.,

midrange) and the output of the bass speaker is used to monitor the signal S2 (i.e., bass) and the signal S5 (i.e., harmonic distortion). Neither the depicted model nor the remainder of the Deb reference discloses grouping a plurality of output signals as an ordered set in a multiplexer as a first composite signal.

More simply, Deb assigns signals to the attributes of an output one chooses to measure or monitor and as such discloses an output of a model having multiple attributes of concern requiring an exclusive, separate, and distinct signal for each such attribute. That is, Deb does not disclose grouping a plurality of output signal values as an ordered set in a multiplexer as a first composite signal. Furthermore, by presenting a dependency matrix, in which each signal is plotted against each component, Deb teaches away from grouping the signals. Indeed, nowhere does Deb teach or suggest having a logical single entity for a set of multiple signals.

Accordingly, Applicants submit that Deb fails to disclose grouping a plurality of output signal values as an ordered set in a multiplexer as a first composite signal. Hence, applicants respectfully request the Examiner to reconsider and withdraw the rejection of claims 1- 13 under 35 U.S.C. § 102(b).

II. Rejection of Claims 14-20 under 35 U.S.C. § 102(b):

Claims 14-20 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Deb. Applicants respectfully traverse this rejection and contend that Deb does not detract from the patentability of claims 14-20.

Claims 15-20 depend, directly or indirectly, upon independent claim 14, and therefore incorporate the patentable features of claim 14.

Claim 14 is directed to a block diagram modeling process that includes, amongst other steps, the step of grouping a plurality of output signal values as an

ordered set in a multiplexer as a first composite signal. Applicants respectfully contend that Deb fails to disclose, and in fact teaches away from such a step.

As discussed above in relation to the rejection of claims 1-13, Deb discloses a modeling environment that assigns signals to the attributes of an output one chooses to measure or monitor and as such discloses an output of a model having multiple attributes of concern requires an exclusive, separate, and distinct signal for each such attribute. That is, Deb does not disclose grouping a plurality of output signal values as an ordered set in a multiplexer as a first composite signal.

Accordingly, Applicants submit that Deb fails to disclose grouping a plurality of output signal values as an ordered set in a multiplexer as a first composite signal. Hence, applicants respectfully request the Examiner to reconsider and withdraw the rejection of claims 14- 20 under 35 U.S.C. § 102(b).

III. Rejection of Claims 21-24 under 35 U.S.C. § 102(b):

Claims 21-24 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Deb. Applicants respectfully traverse this rejection and contend that Deb does not detract from the patentability of these claims.

Claims 22-24 depend, directly or indirectly, on independent claim 21, and therefore incorporate the patentable features of claim 21.

Claim 21 is directed to a computer program product residing on a computer readable medium having instructions stored thereon, which, when executed by a processor, causes the processor to group a plurality of output signal values as an ordered set in a multiplexer as a first composite signal. Applicants respectfully contend that Deb fails to disclose, and in fact teaches away from such an act, and therefore does not detract from the patentability of claims 21-24.

As discussed above in relation to the rejection of claims 1-13, Deb discloses a modeling environment that assigns signals to the attributes of an output one chooses to measure or monitor and as such discloses an output of a model having multiple attributes of concern requires an exclusive, separate, and distinct signal for each such attribute. That is, Deb does not disclose a computer program product residing on a computer readable medium having instructions stored thereon which, when executed by the processor cause the processor to group a plurality of output signal values as an ordered set in a multiplexer as a first composite signal.

Accordingly, Applicants submit that Deb fails to disclose grouping a plurality of output signal values as an ordered set in a multiplexer as a first composite signal. Hence, Applicants respectfully request the Examiner to reconsider and withdraw the rejection of claims 21- 24 under 35 U.S.C. § 102(b).

IV. Rejection of Claims 25, 26, and 28 under 35 U.S.C. § 102(b):

Claims 25, 26, and 28 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Deb. Applicants respectfully traverse this rejection and contend that Deb does not detract from the patentability of these claims.

Claims 26 and 28 depend upon independent claim 25, and therefore incorporate the patentable features of Claim 25.

Claim 25 is directed to a processor and any memory configured to group a plurality of output signals as an ordered set in a multiplexer as a first composite signal. Applicants respectfully contend that Deb fails to disclose, and in fact teaches away from such a processor and a memory, and therefore, does not detract from the patentability of claims 25, 26, and 28.

As discussed above in relation to the rejection of claims 1-13, Deb discloses a modeling environment that assigns signals to the attributes of an output one chooses

to measure or monitor and as such discloses an output of a model having multiple attributes of concern requires an exclusive, separate, and distinct signal for each such attribute. That is, Deb does not disclose processor and a memory configured to group a plurality of output signals as an ordered set in a multiplexer as a first composite signal.

Accordingly, Applicants submit that Deb fails to disclose a processor and memory configured to group a plurality of output signal values as an ordered set in a multiplexer as a first composite signal. Hence, Applicants respectfully request the Examiner to reconsider and withdraw the rejection of claims 25, 26, and 28 under 35 U.S.C. § 102(b).

V. Rejection of Claims 29-32 under 35 U.S.C. § 102(b):

Claims 29-32 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Deb. Applicants respectfully traverse this rejection and contend that Deb fails to detract from the patentability of these claims.

Claims 30-32 depend, directly or indirectly, upon independent claim 29, and therefore incorporate the patentable features of claim 29.

Claim 29 is directed to a modeling process that includes the steps of providing a plurality of blocks, grouping output signals from the blocks as an ordered set in a multiplexer as a composite signal, and outputting the composite signal. Applicants submit that Deb fails to disclose, and in fact teaches away from such a modeling process and therefore does not detract from the patentability of claims 29-32.

As discussed above in relation to the rejection of claims 1-13, Deb discloses a modeling environment that assigns signals to the attributes of an output one chooses to measure or monitor and as such discloses an output of a model having multiple

attributes of concern requires an exclusive, separate, and distinct signal for each such attribute. That is, Deb does not disclose a modeling process that groups a plurality of output signals as an ordered set in a multiplexer as a composite signal.

Accordingly, Applicants submit that Deb fails to disclose a modeling process that groups a plurality of output signal values as an ordered set in a multiplexer as a composite signal. Hence, Applicants respectfully request the Examiner to reconsider and withdraw the rejection of claims 29-32 under 35 U.S.C. § 102(b).

VI. Rejection of Claim 33 under 35 U.S.C. § 102(b):

Claim 33 stands rejected under 35 U.S.C. § 102(b) as being anticipated by Deb. Applicants respectfully traverse this rejection and contend that Deb does not detract from the patentability of claim 33.

Claim 33 is directed to a computer program product residing on a computer readable medium having instructions stored thereon, which, when executed by a processor causes the processor to group output signals from one or more blocks as an ordered set in a multiplexer as a composite signal and output the composite signal. Deb fails to disclose, and in fact teaches away from, grouping output signals from one or more blocks as an ordered set in a multiplexer as a composite signal and outputting the composite signal. Therefore, Deb does not detract from the patentability of claim 33.

As discussed above in relation to the rejection of claims 1-13, Deb discloses a modeling environment that assigns signals to the attributes of an output one chooses to measure or monitor and as such discloses an output of a model having multiple attributes of concern requires an exclusive, separate, and distinct signal for each such attribute. That is, Deb does not disclose a computer program product residing on a

computer readable medium having instructions stored thereon which, when executed by the processor, causes the processor to group output signals from a plurality of blocks as an ordered set in a multiplexer as a composite signal.

Accordingly, Applicants submit that Deb fails to disclose a computer program product residing on a computer readable medium having instructions stored thereon which, when executed by the processor, causes the processor to group output signals from a plurality of blocks as an ordered set in a multiplexer as a composite signal. Hence, Applicants respectfully request the Examiner to reconsider and withdraw the rejection of claim 33 under 35 U.S.C. § 102(b).

VII. Rejection of Claim 34 under 35 U.S.C. § 102(b):

Claim 34 stands rejected under 35 U.S.C. § 102(b) as being anticipated by Deb. Applicants respectfully traverse this rejection and contend that Deb does not detract from the patentability of claim 34.

Claim 34 is directed to a processor and memory configured to provide a number of blocks, to group the output signals of the blocks as an ordered set in a multiplexer as a composite signal, and output the composite signal. Deb fails to disclose, and in fact teaches away from, such a processor and memory recited in claim 34.

As discussed above in relation to the rejection of claims 1-13, Deb discloses a modeling environment that assigns signals to the attributes of an output one chooses to measure or monitor and as such discloses an output of a model having multiple attributes of concern requires an exclusive, separate, and distinct signal for each such attribute. That is, Deb does not disclose a processor and memory configured to group

output signals from a plurality of blocks as an ordered set in a multiplexer as a composite signal.

Accordingly, Applicants submit that Deb fails to disclose a processor and memory configured to group output signals from a plurality of blocks as an ordered set in a multiplexer as a composite signal. Hence, Applicants respectfully request the Examiner to reconsider and withdraw the rejection of claim 34 under 35 U.S.C. § 102(b).

VIII. Rejection of Claim 35 under 35 U.S.C. § 102(b):

Claim 35 stands rejected 35 U.S.C. § 102(b) as being anticipated by Deb. Applicants respectfully traverse this rejection and contend that Deb does not detract from the patentability of Claim 35.

Independent Claim 35 is directed to a method for providing a composite signal in a modeling environment. Claim 35 includes the steps of providing a plurality of output signals from one or more blocks, generating a composite signal comprising a set of the plurality of output signals, and providing the composite signal as an output signal. Deb fails to disclose, and in fact teaches away from, the steps of claim 35.

As discussed above in relation to the rejection of claims 1-13, Deb discloses a modeling environment that assigns signals to the attributes of an output one chooses to measure or monitor and as such discloses an output of a model having multiple attributes of concern requires an exclusive, separate, and distinct signal for each such attribute. That is, Deb does not disclose a method for providing a composite signal in a modeling environment that includes the step of generating a composite signal comprising a set of a plurality of output signals from one or more blocks.

Accordingly, Applicants submit that Deb fails to disclose a method for providing a composite signal in a modeling environment that includes the step of generating a composite signal comprising a set of a plurality of output signals from one or more blocks. Hence, Applicants respectfully request the Examiner to reconsider and withdraw the rejection of claim 35 under 35 U.S.C. § 102(b).

IX. Rejection of Claim 36 under 35 U.S.C. § 102(b):

Claim 36 stands rejected under 35 U.S.C. § 102(b) as being anticipated by Deb. Applicants respectfully traverse this rejection and contend that Deb fails to disclose, and in fact teaches away from the steps of Claim 36.

As discussed above in relation to the rejection of claims 1-13, Deb discloses a modeling environment that assigns signals to the attributes of an output one chooses to measure or monitor and as such discloses an output of a model having multiple attributes of concern requires an exclusive, separate, and distinct signal for each such attribute. That is, Deb does not disclose a method for graphically representing a composite signal in a modeling environment that includes the step of providing a composite signal identifier to graphically indicate a grouping of signal identifiers. The composite signal identifier representing a composite signal comprising a set of a plurality of output signals.

Accordingly, Applicants submit that Deb fails to disclose a method for graphically representing a composite signal in a modeling environment that includes the step of providing a composite signal identifier to graphically indicate a grouping of signal identifiers. Hence, Applicants respectfully request the Examiner to reconsider and withdraw the rejection of claim 36 under 35 U.S.C. § 102(b).

CLAIMS REJECTIONS UNDER 35 U.S.C. § 103(a)

Claim 27 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Deb in view of the publication entitled "Multi-Signal Modeling For Diagnosis, FMECA, and Reliability" authored by Ghoshal *et al.* (hereinafter "Ghoshal"). Applicants respectfully traverse this rejection and contend that neither Deb nor Ghoshal, alone or in combination, teach or suggest each and every element of Claim 27.

Claim 27 depends from independent Claim 25, and therefore, incorporates the patentable features of Claim 25.

Claim 27 is patentable for the same reasons as set forth above regarding claim 25, from which it depends. The further recitation in Claim 27 of the processor and the memory are incorporated into a network server residing in the Internet, provides a separate further basis for patentability. As discussed above with reference to the rejection of claim 25, the Deb reference does not teach or suggest a processor and memory configured to group a plurality of signal output signal values as an ordered set in a multiplexer as a first composite signal. The Ghoshal reference fails to bridge the factual deficiencies of the Deb reference.

Ghoshal teaches a multi-signal modeling methodology for capturing information necessary for the automation of failure modes effects and criticality analysis (FMECA).

Ghoshal is cited for teaching or suggesting a web server or database server for providing a web-based re-usable test library. Nonetheless, Ghoshal fails to bridge the factual deficiencies of Deb because Ghoshal fails to teach or suggest a processor and a memory configured to group a plurality of output signal values as an ordered set in a multiplexer as a first composite signal. According, Applicant submits that neither

Deb nor Ghoshal, alone or in combination, teach or suggest each and every element of Claim 27. Hence, Applicants respectfully request to the examiner to reconsider and withdraw the rejection of Claim 27 under 35 U.S.C. § 103(a).

CONCLUSION

In view of the above, each of the presently pending claims in this application is believed to be in condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue. If, however, the Examiner considers that further obstacles to allowance of these claims persist, we invite a telephone call to Applicant's representative.

Dated: October 19, 2005

Respectfully submitted,

By David R Burns

David R. Burns
Registration No. 46,590
LAHIVE & COCKFIELD, LLP
28 State Street
Boston, Massachusetts 02109
(617) 227-7400
(617) 742-4214 (Fax)
Attorney for Applicant